

## MARK SCHEME for the May/June 2007 question paper

### 5070 CHEMISTRY

5070/04

Paper 4 (Alternative to Practical), maximum raw mark 60

This mark scheme is published as an aid to teachers and candidates, to indicate the requirements of the examination. It shows the basis on which Examiners were instructed to award marks. It does not indicate the details of the discussions that took place at an Examiners' meeting before marking began.

All Examiners are instructed that alternative correct answers and unexpected approaches in candidates' scripts must be given marks that fairly reflect the relevant knowledge and skills demonstrated.

Mark schemes must be read in conjunction with the question papers and the report on the examination.

- CIE will not enter into discussions or correspondence in connection with these mark schemes.

CIE is publishing the mark schemes for the May/June 2007 question papers for most IGCSE, GCE Advanced Level and Advanced Subsidiary Level syllabuses and some Ordinary Level syllabuses.

Page 2	Mark Scheme	Syllabus	Paper
	GCE O LEVEL – May/June 2007	5070	04

- 1 (a) syringe [1]
- (b)  $72 \text{ cm}^3$  [1]
- [Total: 2]
- 2 (a) lime water turns milky [1]
- (b) (i) effervescence stopped [1]
- (ii) solid remained  
(answers must be different in (i) and (ii))  
(no precipitates or solubility in answers) [1]
- (c) filtration [1]
- (d) (iii) [1]
- (e) 0.025 moles [1]
- (f)  $161 \times 0.025 = 4.025$  (1) g [1]
- (g)  $0.6 \text{ dm}^3$  [1]
- [Total: 8]
- 3 (a) (i) bromine, brown gas, colour spreads to fill all the jar [1]
- (ii) diffusion [1]
- (b) (i) brown to colourless [1]
- (ii) it contains a double bond or is unsaturated [1]
- (iii) addition [1]
- (iv)  $\text{C}_3\text{H}_6$  (1), propene (1)  
(no consequential name mark for incorrect alkene) [2]
- [Total: 7]
- 4 (a) [1]
- [Total: 1]
- 5 (c) [1]
- [Total: 1]
- 6 (c) [1]
- [Total: 1]
- 7 (d) [1]
- [Total: 1]

Page 3	Mark Scheme	Syllabus	Paper
	GCE O LEVEL – May/June 2007	5070	04

- 8 (a) 1.51 (g) [1]
- (b) pipette [1]
- (c) purple or pink to colourless [1]
- (d)

25.2	31.1	48.3
0.0	6.8	23.8
25.2	24.3	24.5

  
mean titre = 24.4 cm<sup>3</sup> (4)
  
mark correct rows OR columns to advantage of candidate. One mark for each correct row OR column (3) [4]
- (e) 0.00244 (moles) [1]
- (f) 0.00244 [1]
- (g) 0.0244 [1]
- (h) 0.05 [1]
- (i) 0.0256 [1]
- (j) 0.0128 [1]
- (k) 118 [1]
- (l)  $x = 2 (1), = 4 (1)$  [2]
- (m) (i) C<sub>2</sub>H<sub>5</sub> OOC C<sub>2</sub>H<sub>4</sub> COOC<sub>2</sub>H<sub>5</sub> [1]
- (ii) esters [1]
- [Total: 18]**

Page 4	Mark Scheme	Syllabus	Paper
	GCE O LEVEL – May/June 2007	5070	04

- 9 (a) transition metals or metal ions not present (Not 'V is not a transition metal') [1]
- (b) (i) white ppt., [1]  
(ii) soluble in excess [1]
- (c) (i) aqueous ammonia [1]  
(ii) white ppt. [1]  
excess aqueous ammonia, soluble in excess [1]  
(use of ammonia or ammonium loses first mark)
- (d) dilute nitric acid (1), aq. silver nitrate (1) white ppt. (1) [3]  
**[Total: 9]**
- 10 (a) temperatures – 27.5, 29.9, 32.4, 33.0 all correct [1]  
temperature rises – 2.5, 4.9, 7.4, 8.0 all correct [1]
- (b) all points plotted correctly (1)  
two straight lines drawn in each case intersecting correctly (2)  
(points joined by a curve or third straight line in each case, 1 only)  
through zero (1) [4]
- (c) 0.32 g [1]
- (d) 0.56 g [1]
- (e) (i) 0.65 g [1]  
(ii) 0.70 g [1]
- (f) No temperature change or no reaction (1), Ag below Cu in reactivity series or silver does not react with copper(II) sulphate (1)  
(any suggestion of a reaction or temperature change loses both marks) [2]

The answers to (c), (d) and (e) are those on the candidate's graph.  
In all cases read to nearest HALF SMALL SQUARE.

**[Total: 12]**